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New Plants from North Dakota.

J. LUNELL.

The native species representing the multiform Spurge family in North Dakota are, according to my experience, surprisingly few. I never found them on the virgin, undisturbed prairie, but any kind of injury to the ground enables them to germinate. Their minute description is as follows:

Chamaesyce aequata sp. nov.

Planta annua, obscure viridis, ex superiore radice 2-4 ramos crassos et tot graciles, sicut flabellum irradiantes, emittens; rami ipsi pluries furcati et profuse crescentes, humi prostrati, saepe 3 dm. diametro. Caulis teres, vivide et obscure ruber. Herba tota glabra est. Folia distincte petiolata, opposita, 5-17 mm. longa, spatulata vel oblonga vel obovata, ad basim angustata, obliqua, saepe falcata, crenulate-serrulata de superiore parte marginis magis curvatae usque per totam marginem minus curvatam, vel non raro per totam circumferentiam haud indentata. Apex obtusus, rotundatus (numquam truncatus vel retusus). Folia saepe zonam rubram latam in medio habent et marginibus vivide colorata sunt. Involucrum triangulatis lobis et subulatis. Semina fusca, quadrangulata, angulis eminentibus, inter angulos conspicue rugosa, et inter rugas depressa.

Annual, dark green, from a point immediately above the upper end of the root. sending out 2-4 thick branches and as many slender branches, radiating not unlike a fan, the branches themselves branching out dichotomously and growing profusely, prostrate on the ground, often reaching 3 dm. in diameter. The stems are terete and bright red; glabrous as is the whole plant. Leaves distinctly petioled, opposite, 5-17 mm. long, spatulate or oblong or obovate, narrowed at the base, the outline more curved on one side of the median line than on the other, the less curved line often approaching the straight line or the inward bent (then making the whole outline falcate), crenulate serrulate from the upper third of the more curved line along the whole of the less curved line, the indentation quite often failing (the margin seemingly being obliterated by age), thus leaving the whole margin entire or nearly so. The apex is obtuse, rounded (never truncate or retuse). The leaves often present a broad, red belt along part of the median nerve and a bright coloration along their margins. The lobes of the involucre triangular and subulate. The

dark sage-colored seeds quadrangular with prominent angles, the slightly ovate outline approaching the cylindrical form, or with an unequal contour, presenting the straight line on one side and the curve of the ovate line on the opposite, the space between the angles conspicuously rugose and depressed between the rugae.

The plant grows where the ground is level, and develops its fullest beauty where no intruding plants share with it the space needed for its entire expansion.

A species that may be apt to be confounded with this is *C. rugulosa* (Engelm.) Rydb., with its thickly matted growth and leaves toothed along the whole of the less curved side, but its seeds are turgid and very finely rugulose, with deep and irregular pits, and the apex of the leaf is retuse (vide *Pittonia* II, plate 1). *C. serpyllifolia* (Pers.) Small, differs in having oval, retuse leaves, crenulate at the apex, is procumbent (Persoon. Synopsis Platarum, Vol. II, p. 14]1807[, and has an angled, in the type almost winged stem (vide, *Pittonia*, l. c.). *C. neo-mexicana* (Greene) is erect, with branches acutely angled, with elongated, sharply pointed seeds, the two ventral facets being concave, and the lobes of the involucre entire or 2-3-cleft. *C. consanguinea* (Engelm.) is rather erect, the apices of the leaves are obtuse and sharply serrate, the lobes of the involucre are lacerate, the seeds are quite dark, rather ovate and blunt on the angles, and the stems and leaves have a more or less red coloration. *C. glyptosperma* (Engelm.) Small, is erect spreading, has linear-oblong, usually falcate and toward the apex slightly serrulate leaves, and quadrangular seeds with 5 or 6 sharp transverse wrinkles and no pitting between these.

The natural disposition of the plant is to spread prostrate upon the ground, but even the least obstacle in its way prevents it from coming there. In this respect it is unlike most other creeping plants, who work their way easily around or between the obstructions. Certain natural conditions force the plant to take the ascending course, and it then appears as the following variety:

***C. aequata* var. *claudicans* nov. var.**

Ascending, freely branching; the branches are drooping, more or less. It grows on level ground, roadsides, etc. There is something in the way, as for example one or two stems of grass or other plants, a dead leaf, etc., preventing it from spreading over the ground and on account of its aversion to "crookedness," it is forced to grow in a direction diametrically contrary to its native impulse. But it drops its branches longingly toward the ground which they can never reach. This

variety, having to accept conditions that are opposed to its natural tendencies, becomes more or less checked in its growth thereby, but it is no such restraint to the type which attains a size widely surpassing it.

Chamaesyce erecta sp. nov.

Planta annua, viridescens, glabra, erecta, 1-2 dm. alta, furcata, ramos bifurcatione productos etiam aetate breves et plerumque simplices praebens nec raro duos prope aequales ramos e basi emittens. Caules teretes, virides, vel rubescentes. Folia breviter petiolata, $\frac{1}{2}$ -1 $\frac{1}{2}$ cm. longa, spatulata vel obovata, basi obliqua, serrulata de dimidia parte superiore marginis brevioris usque per totam marginem longiorem viridescencia, vel rubescentia, numquam medio rubro-maculata, apice obtusa et rotunda. Semina angulis eminentibus ornata, vel tuberculata vel rugosa, inter tubercula vel rugas haud vel leviter foveolata.

Annual, light green, glabrous, erect, 1-2 dm. high, dichotomously branched, but leaving the branches (even at the end of the season) short and usually simple, or sometimes forking out into two equal main branches from the base. Stems terete, green or light red. Leaves short-petioled, $\frac{1}{2}$ -1 $\frac{1}{2}$ cm. long, spatulate or obovate, oblique at the base, serrulate from the upper half of the shorter side down the whole length of the longer side, light green or light red, never with any red blotch in the median line, apex obtuse, round. Seeds with prominent angles, rugose or tuberculate, with shallow or no impressions between the rugae or tubercles.

It differs from the other erect species of this group, *C. neomexicana* (Greene) and *C. consanguinea* (Engelm.), chiefly by the extended indentation of its leaves, and by other characters mentioned above.

The type locality for these spurges is Leeds, N. Dak., where the first named species is common and the other is sparingly found during the months of July and August. The extension of their territories is unknown to me.

Ranunculus eremogenes Greene var. *Longissimus* var. nov.

Rooting from the nodes with long slender fibres. Stem 8 dm. long; to this length has to be added that lowest unmeasured part of the plant which I was unable to secure from the bottom of the creek where it was growing. The lower leaves very long-petioled (1.5-4.5 dm.). Collected on June 27, 1907, in running water at Leeds, North Dakota.

Senecio Purshianus Nutt. var. *viridescens* var. nov.

This plant differs from the main form in not being constantly white-tomentose, as it becomes gradually greener the more it approaches the time of maturity; in addition, its texture is very soft and herbaceous. It grows in places thoroughly exposed to the sun, preferably high hills. Its flowering time is June, and it is common in central North Dakota.

Some time ago I submitted this variety to Dr. E. L. Greene, asking him to describe it for publication. He expressed his opinion of it in a letter to me, but did not promise to publish it. In introducing it the golden rule of giving every one his due justifies and commands my acknowledgement of this indebtedness to Dr. Greene.

Corisperm simplicissimum nov. sp.

Planta annua, gracilis, erecta, simplex usque ad inflorescentiam, parte media e tribus valde foliosa, foliis partis inferioris e tribus probabiliter pallescentibus et caducis. Planta tota, imprimis pars ejusdem superior, pubescens etiam aetate, circa 3 dm. alta altiorve, in inflorescentiam multiplicem terminans, unius spicae longae terminalis, et 1-7 spicarum breviter pedunculatarum, vel aliquando subsessilium, angustatum, divergentium, in supremis foliis axilarium. Folia anguste linearia, cuspidata, 2-4 cm. longa, 1 mm. lata vel minus, pubescentia. Bracteae 2-12 mm. longae, 1-1.2 mm. latae, subulatae, margine scariosae, tam latae vel latiores quam utriculum. terminalis 3-7 cm. longa et iis minus angustata. Bracteae per terminalis 3-7 cm. longa et iis minus angustatae. Bracteae per totam inflorescentiam plus minusve densae. Achenia alata singulis vel ambobus lateribus, 2.5 mm. longa, 1 mm. lata ovalia et bractea subtendente cooperta.

Plant annual, slender, erect, simple up to the inflorescence, quite leafy on the middle third, the leaves of the lower third probably fading and dropping earlier in the season. The whole plant, especially in its upper part is pubescent, even in age, and about 3 dm. tall, or taller. Leaves narrowly linear, cuspidate, 2-4 cm. long, 1 mm. wide or less, pubescent. Bracts 2-12 mm. long, 1-1.2 mm. broad, awlshaped, scarious-margined, all as wide or wider than the utricle. The inflorescence is composed of one long spike on top, and 1-7 short-peduncled or sometimes subsessile narrow, divergent spikes in the axils of the upper leaves.

The lateral spikes are 1-2.5 cm. long, narrow, and the terminal spike is 3-7 cm. long, not quite as narrow. All the bracts in the spikes are more or less loosely crowded. Fruits wing-

margined on one or both sides, 2.5 cm. long, 1 mm. broad, ovoid, all covered by the subtending bract.

The predominant feature of this species is its peculiar aspect, the stem being simple throughout to the top with its short peduncled spikes in the upper axils. Its nearest relative, *C. nitidum* Kit., is bushy-branched throughout; its leaves are narrowly linear and seldom more than 2 cm. long; its bracts are not imbricated and are narrower than the utricle, which is 2 mm. long and 1 mm. wide and winged, and the plant is almost glabrous.

C. hyssopifolium L. is profusely branched throughout, its leaves up to 6 cm. long and 4 mm. wide: its bracts are imbricated and its utricle is 3.5-5 mm. long, winged.

I have made out the characters of both of these species from European specimens in my herbarium. All the three aforesaid species are floriferous at the top only. Four other North American species belonging to the west, differ in being floriferous nearly to the base, and divaricately branched below. Two of these, moreover, have a wingless utricle.

The type specimen of *C. simplicissimum* is registered as No. 112 in my private herbarium. The plant was collected by me Aug. 26, 1890, on the shore of a lake several miles south-east of Barton, Pierce Co., North Dakota, as yet the only locality from which it is known to me.

Leeds, North Dakota.

The Laboratory Aquarium.*

J. A. NIEUWLAND.

The term aquarium in its broadest sense may be said to mean any vessel or receptacle for the development of aquatic life. It is most commonly applied to a tank or vessel for keeping the larger aquatic animals. In the latter sense very little reference will be made to the word in this discussion. Most of us may be best acquainted with the term as used for something to keep or domesticate fish and fishlike animals mostly for pleasure. I shall discuss the subject leaving out entirely this interpretation of the word, and confine myself entirely to the laboratory plant aquarium. However, much may have been

*Paper read at the meeting of the Indiana Science and Mathematics Teachers, Richmond, Ind., March 5, 1910.